Monthly Progress Report
Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)
June 2000

This report summarizes Los Alamos National Laboratory (LANL) activities that were completed during June of fiscal year (FY) 2000 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918)], which was submitted to the New Mexico Environment Department-Hazardous and Radioactive Materials Bureau [NMED-HRMB] on 9/30/98, and approved by NMED-HRMB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

High Performing Team (HPT) Cerro Grande Fire Recovery Activities – The 260 HPT met on June 5, 2000. The HPT spent most of the meeting discussing the impacts of the Cerro Grande fire on the TA-16-260 outfall CMS activities. Potential Release Site (PRS) maps and burned site photos were reviewed with the HPT. All of the CMS activities were reviewed. Table 1 summarizes those activities and likely consequences of the Cerro Grande fire on CMS activities.

Table 1
Impacts of Cerro Grande Fire on TA-16-260 CMS Activities

Activity	Impact
CdVR-15-3 Drilling	Activity delayed. Increased total costs will be incurred due to wildfire standby charges. There will be limited ability to accelerate the next deep groundwater well.
TA-16-260 IM	Activity delayed. Increased total costs for activity will be incurred due to site recovery charges and due to charges for replacement of burned equipment.
Hydrogeology – RFI quarterly sampling and bromide sampling.	Several locations (upper Canon de Valle, Water Canyon confluence) will be unavailable for quarterly sampling due to fire damage or flood hazards. Bromide sampling at SWSC spring will be curtailed due to ISCO damage. ISCOs will be reinstalled in August. LANL noted that this may be a good time to stop collecting every-other-day bromide samples at SWSC spring.
Hydrogeology - Residence times	Stable isotope samples at several locations (upper Canon de Valle, Water Canyon confluence) will be unavailable for sampling due to fire damage or flood dangers. Stable isotope samples at SWSC spring will be unavailable due to ISCO damage. ISCOs will be reinstalled in August. Precipitation sampling during the period of the fire was missed.
Hydrogeology –	Contaminant samples at SWSC spring, including flow-integrated

Spring and seep dynamics	samples, will be unavailable due to ISCO damage. ISCOs will be reinstalled in August. Contaminant sampling during the period of the fire was missed.
Hydrogeology – Alluvial water dynamics	LANL will evaluate any effects on alluvial wells. At this time alluvial well sampling and flume studies can proceed. Geophysical studies and potholing will be delayed until the end of the summer (budget allowing).
Hydrogeology – Alluvial sediment dynamics	Phase II investigations may need to be delayed due to unavailability of Canyons personnel such as Steve Reneau. They are booked up with work in other canyons.
Risk assessments –	There may be severe impacts to the ecological risk assessments. The 260 team and eco teams need to evaluate the magnitude of the damage to Canon de Valle. Following this, a path forward on the ecological risk assessments will be developed.
CMS B&P - Composting	This activity has been delayed by the evacuation of the trailers and the roasting of the HE soil drum. It will begin again as soon as possible.
CMS B&P – Stabilization	This activity will proceed with a one-month delay.
CMS B&P – Bioslurry with ZVI	This activity, which represents the W.R. Grace studies, will be delayed due to the delay with the composting studies.
CMS B&P – Phytoremediation	The Canon de Valle based portion of this study may have to be delayed until sufficient vegetation returns. See Ecological risk assessment.
CMS B&P – Passive barrier	The Stormwater Management pilot will be delayed until the end of the summer. It may be moved into Martin canyon, due to concerns with flooding in Canon de Valle.
CMS B&P – Natural attenuation	Base line contaminant determinations may be impacted by either increased runoff, or by fire-fighting additives used in the headwaters of Canon de Valle.

LANL representatives provided a copy of data on soil reactivity that had been collected many years ago. Based on these data, it appears a 5% HE level is appropriate for a D003 determination. The blending letter will be submitted this week, at. A tour of burned sites at TA-16 was held for NMED personnel.

The next meeting is scheduled for July 10, 2000.

RCRA Facility Investigation (RFI) Report and CMS Plan– No new activities occurred during June 2000.

Best Management Practices (BMPs)– Burned BMPs were replaced.

CMS Hydrogeologic Investigations–CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The ongoing Phase II RFI sampling included sampling Burning Ground Spring every other day for bromide, other anions, and stable isotopes. Sanitary Waste Consolidation System (SWSC) and Martin springs were not sampled using the autosamplers, because of damage to those autosamplers in the Cerro Grande fire. The analyses from the June sampling are in process. No new bromide breakthrough has been observed in samples to date. The flow in SWSC spring is at a very low level.

The wells, both alluvial and deep, were checked weekly for both presence and level of water. Four of the five alluvial wells contained water; the exception is still alluvial well 2655, which is located in the steam plant drainage. None of the intermediate-depth boreholes contained water.

In June, 3 samples from precipitation events were collected.

Quarterly sampling of springs, alluvial wells, and other locations was completed. The following locations were not sampled, either due to a lack of water, or due to access issues associated with the Cerro Grande fire: headwaters of Canon de Valle, Fishladder Seep, Water Canyon at ESH-18 station, the confluence of Cañon de Valle and Water Canyon, the Fishladder Canyon cliff, and the two up-drainage monitoring wells in Martin Springs Canyon.

A stream profile, which included laboratory samples, was completed. Both this sampling and the quarterly sampling will support pre-flood characterization on Canon De Valle. Note that the stream profile locations were sampled following a significant rain event.

At CdV-R-15-3, well completion was accomplished. The drill rig was decontaminated and it, and associated structures, were demobilized from the drill site.

Ecological Risk Pilot–

Canon de Valle was surveyed for ecological damage. The survey covered the area from Burning Ground spring to approximately 2000 ft. downgradient from MDA-P. Fire damage is widespread, but generally moderate. The HEPS team ecological risk assessor believes that portions of the ecosystem will recover within a year.

CMS Bench and Pilot Studies–Bench and pilot studies continued in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE program is focused on two DOE sites: LANL and Pantex. Five studies are now ongoing under the auspices of ITRD, all of which may benefit the PRS 16-021(c) CMS:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). This study has been completed.
3. A study of in situ anaerobic bioremediation of HE using gas-phase carbon additions.

4. A study of ex situ anaerobic bioremediation of Pantex soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment.
5. A study of HE composting. Amendments appropriate to northern New Mexico were tested on clean soils. Contaminated soil tests will also be initiated.

A site visit to Martin spring was held to support the passive barrier study. It was determined this location would be appropriate for the Stormwater Management pilot study. The original proposed location, in Canon de Valle, may be at risk due to a potential for severe flooding.

The soil sample collected for the composting study was burned in the Cerro Grande fire. The sample is being re-characterized to determine its appropriateness for the composting pilot. Results are pending.

***Interim Measure* (IM)** –

Work did not resume on the IM until June 14, 2000 after the smoldering debris at MDA-R was extinguished.

The Best Management Practices (BMPs) burned in the Cerro Grande fire were replaced.

Excavation of the lower drainage continued throughout the end of the month. Lower drainage excavation is proceeding slowly; it is very labor intensive to vacuum soil from the area, deposit it in drums, and manually haul the drums out of the drainage. Over 30 drums of material were removed in June.

A tour of the site was held on June 5, 2000 for the 260 HPT.

Soil blending is pending availability of the remote excavator from the MDA-P project. Based on phone discussions between NMED and LANL personnel, blending will require a letter from LANL to NMED, and NMED approval prior to initiation.

Public and Stakeholder Involvement– No activities during June 2000.

Percentage of CMS Completed

LANL estimates 55% of the CMS has been completed to date. Note that this percentage does not reflect the deep wells that will be drilled per the CMS plan addendum.

Problems Encountered/Actions to Rectify Problems

General Problem (1) The Cerro Grande fire has severely impacted the 260 RFI/CMS activities. See Table 1 above.

Action to Rectify General Problem (1): LANL will work closely with NMED through the auspices of the HPT to cope with the effects of the Cerro Grande fire. Discussed in Table 1 above.

CMS Hydrogeologic Investigations

Problem (1) The lack of a completed well at R-25 remains a concern to the TA-16-260 team.

Action to Rectify Problem (1): The screens have been installed and the well has been purged. The well is now being readied for Westbay installation.

CMS Bench and Pilot Studies

Problem (1) The ZVI pilot test did not work effectively for HMX. The additional ZVI added during November did not significantly improve breakdown for HMX.

Action(s) to Rectify Problem (1). Composting is being investigated in place of ZVI.

IM

Problem (1) Several regulatory issues still need to be resolved prior to final implementation of the IM.

Problem(2) Delays at MDA-P will delay availability of the remote excavator. This will delay portions of the IM.

Action(s) to Rectify Problem (1) LANL is meeting frequently with NMED representatives to solve these regulatory issues..

Action(s) to Rectify Problem (2) LANL will wait until the remote excavator is available.

Key Personnel Issues

None.

Projected Work for July 2000

RFI Report and CMS Plan

- No work is scheduled for this month.

BMPs

- Inspection of existing BMPs following significant precipitation events will continue.

CMS Hydrogeologic Investigations

- Reinstallation of burned ISCOs
- Continued bromide sampling of springs
- Weekly checking for levels and presence of water in alluvial and deep wells.
- Sampling of flow-integrated ISCO samplers.
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis
- Well completion at CdV-R-15-3.

Ecological Risk Pilot

- No work anticipated due to fire recovery.

CMS Bench and Pilot Studies

- Resubmission of 401/404 for Stormwater Management pilot design.
- Initiation of composting tests on HE-bearing materials.
- Initiation of study designs for stabilization and phytoremediation.

IM

- Complete removals and staging of low-level HE soils from lower drainage. Initiate soil blending and removal from the pond area, pending NMED approval of blending and availability of the remote excavator.

Public and Stakeholder Involvement

No activities planned.